**Explains the true position in respect of criticisms in the public press about the Krishnarajasagara and Iron Works projects.**

ORDER NO. 575-9—C. B. 36-28-1, DATED 6TH AUGUST 1928.

The Publicity Officer to Government has from time to time contradicted various erroneous statements to which currency was given in the public press, in respect of the combined hydro-electric and irrigation scheme, known as the Krishnarajasagara Project, in the valley of the Cauvery River.

Similar mis-statements respecting the Bhadravati Iron Works were corrected publicly from time to time by the Board of Management as well as, individually, by the Chairman and the General Manager of the Iron Works.

A summary of the criticisms made in respect of these works from time to time and the actual facts regarding each were called for from the officers in charge of the two undertakings, and the statements received from them are published as an accompaniment to this Order.

2. The Krishnarajasagara Scheme, to the extent it has advanced, has fully come up to expectations and the newly started Irwin Canal Scheme is also, in the opinion of competent experts, likely to be remunerative.

3. The Iron Works were over-capitalized during construction, for reasons already placed before the public. The undertaking has also had to face a prolonged depression in the Iron and Steel trade since it started operation in January 1923. Such projects have to be judged in the light of experience of similar works outside the State and considering that the work is still young, the progress is not disappointing. Government are satisfied that no effort is being spared to develop the Works along right lines. They are also satisfied that most of the allegations are untrue and the fears expressed about the future of the undertaking are groundless.

N. MADHAVA RAO,
*Chief Secretary to Government.*

## ANNEXURE I.

## KRISHNARAJASAGARA COMBINED HYDRO-ELECTRIC AND IRRIGATION PROJECT.

| *Allegations.* | *Explanation of the true position.* |
|---|---|
| The Dam is not strong enough to store water up to 124′ or even up to 118′. | This criticism was examined in detail by the Committee presided over by Sir Frederick St. John Gebbie and that Committee have stated that "the profile of the dam, notwithstanding the rear scours which have been effectively repaired, has ample strength to store water up to 124 feet above bed." The report of the Committee has been already published in a Government Communique dated the 30th March 1925. |
| 2. The Dam and Canal have been deliberately underestimated. | The allegation is not borne out by facts. Government Order No. 328-336—K. R. S. 1826-34, dated 23rd December 1925, shows clearly that the excess was due to special circumstances, such as, a change in the height of storage and dam by six feet and a few other features, long delay in execution owing to the Cauvery Arbitration and rise of prices and rates during and after the war.<br>The main cause of the excess, namely, the rise in rates, was due to the value of money going down after the War. In fact, almost every estimate had to be revised as the result of war conditions. |

*Allegations.*

3. The duties assumed are very high and will not be realised, and only 23,000 acres of land can be irrigated.

4. The North Bank High Level Canal is a blunder. This Canal will flow idly for 29 miles and begin to irrigate only beyond the tunnel, whereas a South Canal will begin to irrigate close to the Head sluice. The transmission loss along 29 miles of [redacted]ugged country will be [redacted]er cent.

*Explanation of the true position.*

It may be stated here that the estimates of recent large engineering schemes outside the State have shown even more heavy excesses.

The question of duties was discussed threadbare during the Arbitration and has been explained briefly in paragraph 18 of the Krishnarajasagara Committee's report, dated 22nd May 1927, already issued to the public. The opinion of Sri M. Nethersole, namely, "that the duties are considered quite reasonable" is quoted in that report. Even Col. Ellis, who represented the Madras view in the Mysore-Madras Arbitration, agreed to the duties after inspection and examination of existing channels. His actual statement is: "The irrigation duty of the Mysore Cauvery gauged by flow at the anicut head is less than 30 acres per cusec, while the actual duty is probably 50 to 70 acres and the balance of water returns to the river." (Page 884, Vol. III, Arbitration Proceedings, Mysore print.)

Messrs. S. Cadambi, Karpur Shrinivasa Rav and other Chief Engineers have supported, and expert and informed opinion is all in favour of, the duties assumed. The statement that the irrigable area will be only 23,000 acres, against 1,20,000 provided, is a gross misrepresentation.

No Canal in the State shows such heavy losses in transit as the criticism suggests. The losses allowed in the project are nearly the same as are usually allowed in other projects under similar circumstances elsewhere in India.

As regards the comparative merits of the North and South Bank Canals, the question has been investigated in great detail from the very commencement, since the time of Mr. Mc'Hutchin and Captain Dawes. A Special Committee was appointed in 1921 at the instance of Sir Albion Rajakumar Banerji, who had misgivings about the success of the Scheme, to advise Government on various aspects of it. The Committtee were emphatically in favour of the North Bank Canal and Sir Albion Banerji, before he laid down office, left on record his opinion that the Canal should be taken up as early as possible. "It is not advisable," remarked the Committee, "to open a South Bank Canal or take up any extensions of existing river channels below the reservoir. The North Bank High Level Canal is the only scheme which can be recommended for development of irrigation on an extensive scale below the reservoir in tracts of country liable to chronic drought. In view of the remunerative nature of the undertaking, of the immense benefit to the raiyats, and of the general economic development of the State resulting from the proposed extension of irrigation in the tracts which are badly in need of it, the Committee are strongly of opinion that the High Level Canal Scheme should be taken up as early as possible....."

Sir M. Nethersole, whose professional advice was sought, also approved of the general lines of the scheme. He wrote:

"After inspection of the country between the river and the alignment selected for the tunnel and consideration of the comparative estimates already prepared for alternative alignments, I am of opinion that the tunnel alignment will probably prove the cheapest and it certainly is the most efficient alignment and the most economical of water."

Both North and South Bank Canals are almost similarly situated for the first 27 miles, in respect of area commanded, which is about 11,000 and 7,100 acres, respectively. Investigations have proved that in addition to other obvious disadvantages, the South Bank Canal will not admit of the full

*Allegations.* *Explanation of the true position.*

permissible extent of irrigation being realised according to the Agreement, owing to the proximity of the British boundary on this bank. The North Bank Canal is a necessity if the full limit of irrigation provided in the Agreement has to be taken advantage of.

To sum up, expert and informed opinion has been unanimous in support of the North Bank Canal.

5. The whole Scheme is financially unsound and particularly the High Level Canal.

This is a combined hydro-electric and irrigation scheme. The Hydro-electric portion is already remunerative. Although the scheme is still young and undeveloped, it is already paying 4 to 6 per cent on the capital expended up to date. Few reservoir schemes in British India have shown such favourable results within so short a time from the commencement of operation. The canal scheme taken by itself is also expected to pay ultimately a return of 8·6 per cent on the capital expended on it. (*Vide* page 6, Krishnarajasagara Committee's report published with Government Order No. 15—K. S. S. 95-104, dated 7th July 1927.)

6. No allowance for adequate supply of water is made for the VII Installation Power Scheme.

The history of the VII Installation is not referred to in the Krishnarajasagara Committee's report. Mr. Forbes, the Chief Electrical Engineer, has made it clear in one of his reports that the quantity of water used during nights is always much less than during day-time and that the unused water is being allowed to surplus during nights at Sivasamudram. He has proposed to meet the wants of the VII Installation, practically permanently, by constructing a balancing tank at Sivasamudram to hold a day's supply for storing the surplus during night and utilising the same during day-time. There are also other reasons which need not be referred to here that make it quite unnecessary to provide water for the VII Installation. Hence no separate allowance of water is required for this installation.

CONCLUDING REMARKS.

Ever since the scheme was sanctioned, Government spared no expense or trouble to obtain expert advi every stage of the scheme and in all, five Committees h sat on it till now. The advice of Sir T. R. J. Ward, a forme Inspector-General of Irrigation in India, was obtained unofficially both on the Dam and the Canal schemes. He says in his report:—

"The two Chief Engineers of Mysore brought me the plans of the dam and the canal alignments to get my advice on various technical points connected with the tunnels, aqueducts and the deep cuttings on the canal alignment and about the sluices on the escape of the dam..... I was much impressed by the thoroughness of the organisation and the skill with which the works have been carried out. The methods were economical and sound. The work is substantial and well built in every detail. We spent much time in the mortar testing department. There is every evidence to show that the quality is unexceptionable....."

SIR M. Nethersole was also consulted as a special adviser in regard to the dam and the canals. His opinion about the tunnel alignment, which he considered to be most efficient, and the North Bank Canal has been already quoted.

It will be seen that the scheme has received more than adequate technical scrutiny in all stages. Its main features have been discussed in great detail in the course of the prolonged Madras-Mysore Arbitration and its soundness is unassailable.

K. R. SESHACHAR,
*Chief Engineer,*
*Krishnarajasagara Works.*

*11th July 1928.*

## ANNEXURE II.

### MYSORE IRON WORKS, BHADRAVATI.

*Allegations.*

The professional opinion of Dr. Smeeth was that the scheme would not pay and would never succeed.

He considered that the excess of phosphorus in the ore spelt failure of the Iron Scheme. But his opinion was overruled by Mr. Perin.

Dr. Smeeth gave in 1915, a true but highly discouraging account of the low yield of the timber per acre and the cost of building tramways in the Malnad.

II. Sir Alfred Chatterton has foretold the shut down of this enterprise.

III. There has been a change of policy in charging for the wood supplied by the Forest Department since the new Board of Management was constituted.

*Explanation of the true position.*

The truth is otherwise. Dr. Smeeth, formerly Director of Geology and Mining in Mysore, was sent on deputation to Europe and America to study the manufacture of charcoal iron and wood distillation industries. He served practically on every Committee connected with the scheme and was also for a long time on the Board of Management.

The extracts given below under quotation marks from notes prepared by him in 1916 and 1919 give a correct version of his views:—

"I am satisfied that part of this ore (on the Kemmangundi ridge), perhaps half a million tons or more, will be really high class ore and that there will be several times this amount of ore which will be better than that assumed in the report".

"Mr. Perin gives it as his opinion that the results of the scheme will be profitable and so far as it goes, this view accords with my own".

* * * *

"Considerable additional profit may be made by converting a portion of the pig iron into steel and supplying high grade castings, forges, tool steels."

"The Steel portion would be of the greatest importance."

"The probability of our being able to find the necessary wood and of finding markets for the products are in my opinion sufficiently good to justify our continuing the erection of the plant and fulfilling engagements into which Government have entered."

"Even if we cannot get the wood distillation plant or if it would be advantageous to wait for lower prices for it, we can obtain charcoal from the forests and start iron smelting which would in my opinion pay by itself."

"The most advantageous lines should be taken in hand first and expenditure of Rs. 20,00,000 should suffice for several years' wood supply."

The Forest Department will be able to assure the public that the actual yield measured in tons per acre of forest is better than that originally estimated.

When he made this remark, Sir Alfred was "not in possession of accurate data regarding the results achieved." At the time the scheme was started he wrote:—

"The main point is that Mr. Perin considers that our ore supplies are suitable for the manufacture of iron and that the success of the scheme entirely depends upon the establishment of wood distillation on a large scale. His view exactly coincides with my own." Further he said: "If the price of wood can be reduced to Rs. 5 a ton, the wood distillation plant can be made to pay its way and yield Government about five per cent on the Capital."

NOTE.—The actual price of wood at the present time is less than Rs. 5 per ton.

There has been no change except in the method of exhibiting the transaction in the Government books. The Mysore Iron Works have always paid the collection, establishment and cultural charges. No portion of these charges have directly or indirectly been borne by the Forest Department at any time.

I. B.

| *Allegations.* | *Explanation of the true position.* |
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| IV. No arrangements exist for natural regeneration of trees. | 'ven a casual visit to the worked forest areas will convince any one of the natural reproduction of the coppiced trees. Mr. C. C. Wilson, Forest Economist, Forest Research Institute, Dehra Dun, who visited Bhadravati in September 1927, has in a departmental note remarked:—<br>"The fellings are under a coppice with standards system and are restricted to material above 18" girth, in addition some 25 standards per acre are left. * * *<br>"The forest was in first class condition and it was difficult to realise that it had been worked at all, so recently." |
| V. The original estimates were unworkable. Prices were rising, machinery could be got only when the war ended and the prices would be much higher then. | This is easier said after the event.<br>The estimate was based on the latest prices of machinery and plant as ascertained by the Consulting Engineers.<br>At a Conference between the Dewan, Mr. Perin and Mr. Ghandy, in November 1917, action necessary to limit the expenditure was discussed in detail and Rs. 78 lakhs was considered sufficient by the Consulting Engineers and the Agents. If this understanding and the measures then contemplated had been steadily kept in view in the construction stage, the expenditure could perhaps have been better controlled. |
| VI. No Budget was prepared for 1923-24, and in the following years, incorrect budgets were submitted taking the market value of unsaleable pig iron, constituting five-sixths of the output, as actual receipts. | One of the first things that the present Board of Management did after its constitution in April 1923 was to prepare and submit to Government Budget estimates for the complete concern for the year 1923-24.<br>The Budgets and the Balance Sheets of the Iron Works have been prepared on the basis of well understood account principles followed in all commercial undertakings ; and there is absolutely no warrant for doubting their correctness.<br>The Pig Iron is not unsaleable nor has five-sixths of the production remained unsold in any year. Latterly, almost the entire output is being sold. |
| VII. A sum of Rs. 3¾ crores has been wasted on this work, which even now is not self-supporting as no provision is made for depreciation amounting to Rs. 7 lakhs a year. | The following statement gives the losses in the construction stages before the present Board was constituted :— |

| | Rs. Lakhs. |
|---|---|
| Loss due to overcapitalization .. .. | 87 |
| Loss due to commitments during construction period and the first half-year of operation. | 12 |
| Total .. | 99 |

The actual operation losses since the present Board took charge have been:—

| | Rs. Lakhs. |
|---|---|
| Loss on operation .. .. | 7 |
| Loss on stock due to fall in prices .. | 7 |
| Total .. | 14 |
| Loss on operation during 1926-27 .. | Nil |
| Profit on operation during 1927-28 (approximate). .. .. | 1·10 lakhs |

In addition to this, small sums aggregating Rs. 9·14 lakhs have been spent on extensions and improvements. These are expected to give a return on their own account, besides improving the remunerative character of the undertaking as a whole.

*legations.*

*Explanation of the true position.*

For the past two years there has been no loss on operation and no demand was made on Government to reimburse such losses. There is no reason to doubt the statement as the accounts are audited by the Government Audit Department every month.

The depreciation on the main plant has been estimated by Mr. Marshall (of the firm of Consulting Engineers) at Rs. 2·21 lakhs per annum. This the work is not able to meet yet, but all special repairs are met by the works.

It is unnecessary to add that interest is not charged to capital anywhere during construction or till the industry is actually established.

VIII. The Pig Iron is unsaleable in India.

The Bhadravati Iron is very popular with all foundry men who have tried it and the sales in India are increasing. The export to America is practically restricted to grades for which no demand has yet developed in India.

IX. Methanol is removed from the list of Denaturants in America.

This is the exact reverse of the truth. Not only has it not been removed in the United States of America but the old regulations have been revised so as to retain only such formulæ as require the use of the maximum quantity of methanol. This has been done to protect the home wood distillation industry against the competition of synthetic products from Europe.

X. Local Boards are forced to pay higher prices for pipes.

Pipes have always been supplied by the Bhadravati Iron Works to the various local bodies at rates which have compared favourably with quotations received from other manufacturers. Our pipes conform to British Standard Specifications and are by no means inferior. If anything, they are superior, being made of purer and close grained charcoal iron.

GENERAL REMARKS.

At the suggestion of the Board of Management, Government have recently appointed a Committee of Visitors composed of members of the Legislative Council and the Representative Assembly to keep in touch with the Works.

The Accounts are regularly audited every month by the Audit Officers of Government. Recently they were also reported upon by an independent firm of Auditors and Accountants from Bombay.

M. VENKATANARANAPPA,
*General Manager.*